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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/685,150

10/14/2003

EikFun Khor

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7590 06/06/2007
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EXAMINER

SNIEZEK, ANDREW L

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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06/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/685,150

Applicant(s)

KHOR ET AL.

Examiner

Andrew L. Sniezek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12, 14-17 and 23 is/are rejected.
- 7) ☒ Claim(s) 4, 13 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following action is taken following a decision of a pre-appeal conference that was mailed 3/2/07. During a subsequent updated search newly discovered art has been found that is directly related to the claimed invention. The Finality of the office action mailed 9/14/06 is withdrawn in view of the following action. A proposed examiners amendment that was discussed with applicant's attorney, prior to the mailing of the decision has not been made due to the newly discovered art. Any art rejections from the previous office action that are applicable will remain in the present office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 5, 8-12, 14-16 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa et al. (US 6,496,322)

Re claim 10: Hasegawa et al. teaches an apparatus and corresponding method of operation that urges an actuator against a stop (column 8, line 66- column 9, line 3), (column 10, line 34-58) and (column 12, lines 29 – 61) at which location several tracks

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are identified at a common actuator position. Note the outer stopper (31) is made from a metallic material therefor provides an actuator position that does not change, i.e. is held fixed and this stable position is used to hold the head accurately at a fixed position. The identification of several tracks are obtained from servo track coordinates.

Re claim 11: Clearly while reading the servo track coordinates, only information related several specific tracks can be obtained due to the eccentricity that is present in the spinning of the disk. One of theses tracks is considered to be the highest-numbered track the stop allows the head to access.

Re claim 12: The selection of a most extreme one from the track identifications is deemed satisfied by the selection of a track (such as 16p, indicated by a heavy black line in figure 11) which is used to write information thereon.

Re claim 14: Clearly when reading servo information the range limit (last track in which servo information can be read) is determined.

Re claim 15: Note column 11, lines 5-11.

Re claim 16: Note figure 8 which depicts a housing that is considered to be a base in which allow components of the drive are mounted directly/indirectly.

Re claim 1: Hasegawa et al. teaches an apparatus and corresponding method of operation that urges an actuator against a stop (column 8, line 66- column 9, line 3), (column 10, line 34-58) and (column 12, lines 29 – 61) at which location several tracks are identified at a common actuator position. Note the outer stopper (31) is made from a metallic material therefor provides an actuator position that does not change, i.e. is held fixed and this stable position is used to hold the head accurately at a fixed position.

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The determination of accessible track range is obtained from servo track coordinates (the tracks in which servo track coordinates can be read).

Re claim 3: Note column 11, lines 5-11.

Re claim 5: Clearly while reading the servo track coordinates, only information related several specific tracks can be obtained due to the eccentricity that is present in the spinning of the disk. One of these tracks is considered to be the lowest-numbered track the stop allows the head to access.

Re claim 8: Deriving another surface's track range is satisfied by a similar procedure as discussed with respect to claim 1 when there is a plurality of disks as described in column 9, lines 20-45.

Re claim 9: see column 12, lines 39-61 which teaches pushing the actuator against the outer stop.

Re claim 23: Hasegawa et al. teaches an apparatus and corresponding method of operation that urges an actuator against a stop (column 8, line 66- column 9, line 3), (column 10, line 34-58) and (column 12, lines 29 – 61) at which location several tracks are identified at a common actuator position. Note the outer stopper (31) is made from a metallic material therefor provides an actuator position that does not change, i.e. is held fixed and this stable position is used to hold the head accurately at a fixed position.

The identification of several tracks are obtained from servo track coordinates. Clearly while reading the servo track coordinates, only information related several specific tracks can be obtained due to the eccentricity that is present in the spinning of the disk.

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The area between the first and last track in which the servo track coordinates can be read form a range as set forth.

4. Claims 1, 5, 8-12, 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Chainer et al. (US006603627B1).

Re claim 1: Chainer et al. teaches a method that includes positioning a data surface adjacent a head (achieved by structure in figure 1) and determines a track range based on several lateral positions while urging the actuator against a stop (operation of figure 3).

Re claim 5: Satisfied by Chainer et al. since stop limits travel of head and therefore the extent of reading of the tracks.

Re claim 8: The claimed another surface's track range is deemed satisfied when a second disk is used with the method taught by Chainer et al.

Re claim 9: See figure 3.

Re claim 10: Chainer et al. teaches a method of urging an actuator against a stop while identifying several tracks (figure 3).

Re claim 11: Clearly the arrangement of Chainer et al. can't read beyond the range head is allowed to travel due to the stop.

Re claim 12: The most extreme track is satisfied due to head travel limited by the stop.

Re claim 14: The range limitation is satisfied due to head travel limited by the stop.

Re claim 16: See structure of figure 1.

5. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Takaishi et al. (6,819,519).

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Re claim 1: Takaishi et al. teaches a method as disclosed with respect to figures 4-7 along with corresponding disclosure that positions a head adjacent a data surface (column 5, lines 61-67) and determines accessible track range when the head is urged against a common position. Note column 6, lines 1-45 along with figures 5 and 6.

Re claim 2: note figures 1-3:

Re claim 3: note in figure 3 the STW initially writes a servo pattern, thereafter the disk is placed in a HDD.

Re claim 5: Note figure 6, which shows reading lowest, track the stop permits.

Re claim 6: The claimed guard band is deemed inherently taught by the tracks locate before the determined starting track (figure 4-5).

Re claim 7: The claimed margin is deemed satisfied by the margin discussed in column 5, lines 44-48 that takes into account thermal deformation or deformation due to impact.

Re claim 8: See figures 8-9.

Re claim 9: Note column 5, line 60 – column 6, line 9.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chainer et al. in view of Takaishi et al.

The teaching of Chainer et al. is discussed above and incorporated herein. Claim 15 additionally sets forth mount the disk on a spindle assembly with the disk having prewritten servo. Although not taught by Chainer et al. such features are well known in the art as taught by Takaishi et al., (figure 3) to allow for recording of high density tracks. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate such a feature into the arrangement of Chainer et al. to allow for high density recorded tracks.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chainer et al. in view of Lee

The teaching of Chainer et al. is discussed above and incorporated herein. The use of guard bands as set forth in claim 17 although not taught by Chainer et al. is satisfied by Lee (figure 3) to insure placements of data within a given range. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Lee in the arrangement of Chainer et al. to insure placements of data within a given range.

Allowable Subject Matter

10. Claim 4, 13, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The method as set forth in claim 4/1 and 18/10 that include system tracks written with a head/track skew of about 0 degrees is neither taught by nor an obvious variation of the art of record. The claimed method as set forth in claim 13/10 that estimates an offset between a center of the several tracks and a center of rotation of the several tracks is neither taught by nor an obvious variation of the art of record.

Response to Arguments

11. Applicant's arguments filed 1/16/07 have been fully considered but they are not persuasive.

Concerning Chainer et al., applicant states that this reference does not teach a common actuator position, does not sense several lateral positions and that "track range" is different than "track spacing". The **common actuator position is when the head is pushed against the crash stop**. After this is achieved then the operations described in figures 3-5 occur. Although the head might be moved by small amounts during these operations, the **head remains against the crash stop**. This is due to the amount the stopper is compressed at each of the sensed positions. However the head **remains against the stopper**. Prior to the office action, applicant agreed that the language " while urging the actuator into a stationary lateral position against a stop" if was used to replace the last two lines of claim 1 then the rejection of claim 1 based on

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Chainer et al. would have been overcome. This language however would be satisfied by the discovery of Hasegawa et al., and therefor has not been entered. Also as shown in figures 3 and 5 several lateral positions are sensed (see for example column 5, lines 23-33). Note that tracks are formed adjacent each other in a lateral manner so that when the head reads servo from two adjacent tracks, lateral positions are sensed. Also it is clear that pairs of adjacent tracks are used in the sensing arrangement, therefor several tracks are sensed and when all sensed tracks are within a specified tolerance the operation is complete. At this time the number of tracks and total surface used for these tracks would be known from the number of pairs within the surface that extends between the compressed states of the stopper when the arm remains in contact against the stopper. This corresponds to the claimed track range for the surface. The tracks within the specified tolerance are known therefore satisfying the identification limitation of claim 10.

Applicants arguments concerning claim 23 with respect to Chainer et al. are persuasive.

Concerning Takaishi et al., applicant states that this reference does not teach sensing several lateral positions at a common actuator position. As seen from figure 7, steps S4-S5 the head is not moveable. Also not figure 6, which depicts a track (100) with a portion of this track (A) above the outer stopper. The sensings that occurs during this period (A) due to the various sectors passing by the head satisfy the claimed sensing several lateral positions while the actuator is at a stop at a common lateral position. The determination of accessible track range for the surface (usable area or

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the disk) would then be determined to be tracks (100-102) as depicted in figure 6.

Additionally, while Chainer does emphasize self-servowriting, no specific reasons are provided why the Chainer et al. cannot be modified with the teaching of Takaishi et al.

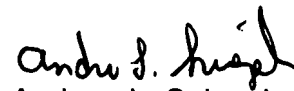
Concerning Lee, applicant states that this reference doesn't teach the claimed guard bands and system tracks. The claims do not clearly define the meaning of system track band or system tracks. This feature is deemed to read on the data zone (33) taught by Lee that is used by the system during recording/reproduction. The guard bands are taught by bands (32, 34).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Snizek whose telephone number is 571-272-7563. The examiner can normally be reached on Mon.-Fri..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Andrew L. Snizek
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